

### **REMARKS**

This Amendment is in response to the Office Action of June 1, 2005 in which the Examiner made certain technical objections to the claims and drawings. The Examiner also rejected claims 1, 2 and 16 as being unpatentable over Davies U.S. Patent No. 2,839,660.

According to the Examiner, Davies does not disclose contacts but discloses a contact to provide electrical connection between two components.

Claims 1 and 2 appear to be rejected as unpatentable over Hunt U.S. Patent No. 5,408, 579. According to the Examiner, Hunt discloses a heater but does not disclose multiple contacts to provide electrical connection between two components.

With respect to the technical objections, the drawings have been amended in order to change reference numeral 6 (shown connected to the resistance element in Fig. 5) to reference numeral 4. This eliminates the duplication asserted by the Examiner, and identifies the electrical resistance which is claimed. No new matter has been introduced.

The amended claims correct the improper dependency asserted by the Examiner.

With respect to the rejections of the claim based upon Davies or Hunt, the Examiner's rejection is respectfully traversed for the reasons set forth below.

The claims have been amended in order to recite an arrangement for controlling the operation of a heating circuit having first and second spaced apart fixed contacts. One fixed contact may be connected to an external power supply and the other fixed contact is connected in circuit with a heater. A bi-metallic strip carries electrically connected movable contacts into and out of contact with the spaced apart fixed contacts. An adjustment mechanism is provided to vary the preloading of the bi-metallic member when the fixed contacts are closed by the movable contacts; and an escapement maintains the contacts normally closed.

Claims 2, 3 and 6 have been cancelled and the subject matter thereof has been incorporated into amended claim 1. In addition, the feature regarding preloading has been added and is supported in the specification at page 7, lines 6-8 and page 8, lines 22-23.

Davies shows a heater with a pair of contacts. One contact is fixed and the other is movable. These contacts are normally spaced apart and open. The bi-metallic thermostatic element provided in Davies has a free end which engages a corresponding free end of the movable contact and moves it into engagement with the fixed contact as the ambient heats up. Spacing between the fixed and movable contact is adjusted by means of a cam.

In the present invention, the contacts are normally closed and the movable contacts are held in position until the ambient cools, whereupon the contacts move out of position and open circuit the heater. The preloading provided to the movable contacts allows for accurate

temperature adjustment and permits the contact to quickly open circuit the heater when the temperature drops below a selected amount. In addition, the bi-metallic element is governed by an escapement mechanism which keeps the contacts positively engaged until the selected temperature is reached to avoid contact chatter around the operating set point.

The Davies reference is mechanically inferior to the present invention because the contact biasing is not constant. Thus, the device is much more difficult to calibrate than the present invention. In addition, there is no escapement mechanism whereby the contacts may be held in positive contact until the selected temperature is reached whereby contact chatter is avoided as in the invention.

Likewise, Hunt is inapplicable to the present invention. In Hunt, an insulated member 26 is attached to the free end of a bi-metal strip. Contacts 20'-22' prime are normally closed, and an insulated actuator carried by the free end of the bi-metallic member forces the normally closed contacts apart to thereby cutoff the heater.

The arrangement in Hunt is mechanically inferior because it is necessary to literally force an insulator between the normally closed contacts. There is no adjustment feature and control is essentially open loop. Also there is no means to avoid contact chatter. In the present invention these shortcomings are overcome by the claimed design.

New claim 17, claims the invention in a different scope. The claimed features of the invention includes the spaced apart fixed contacts

which are interconnected by the movable contacts carried by the end of the bi-metal element. In addition, the preloading adjustment device and the escapement mechanism are claimed.

It is believed that the claimed subject matter is not shown or suggested by the references cited by the Examiner.

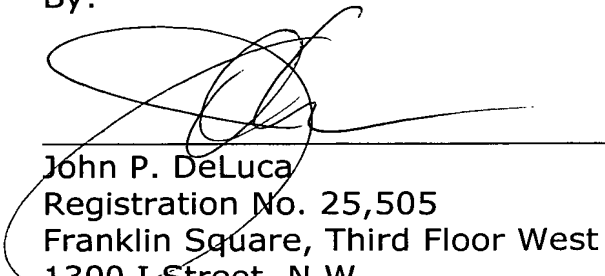
In view of the foregoing, it is respectfully requested that the Examiner reconsider the objection of the claims, the allowance of which is earnestly solicited.

If additional fees are required, please charge Deposit Account 04-2223 for any such fees or credit any overpayment thereto.

Respectfully submitted,

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**Amendment to the Drawings:**

Figure 5 – change reference number 6 for the resistance to 4

An Annotated drawing sheet is attached.

A replacement sheet is attached,

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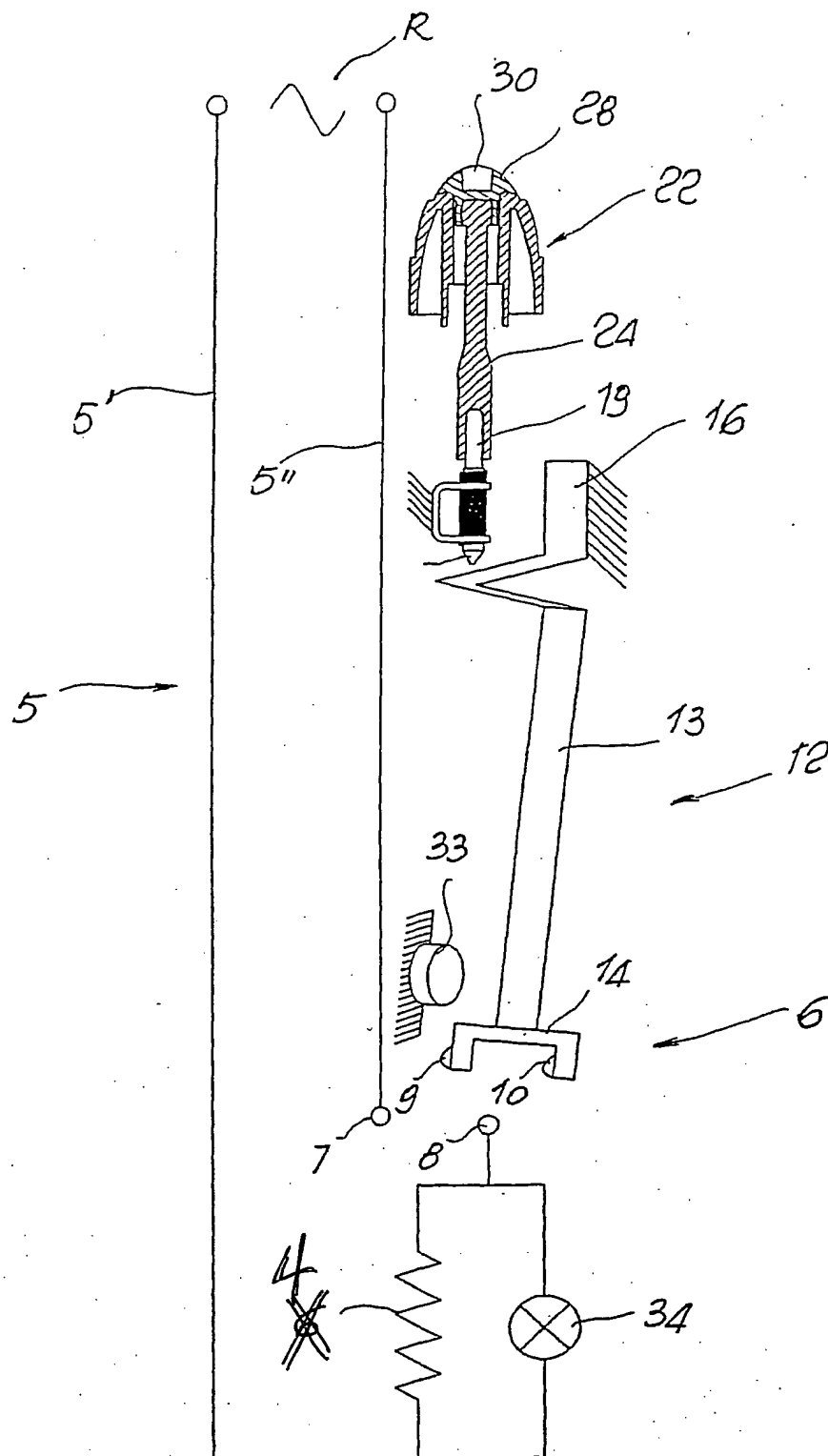


FIG. 5